

PATENT ABSTRACTS OF JAPAN

(11)Publication number : 2001-017154

(43)Date of publication of application : 23.01.2001

(51)Int.Cl.

C12G 3/12

(21)Application number : 2000-121708

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(22)Date of filing : 21.04.2000

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(30)Priority

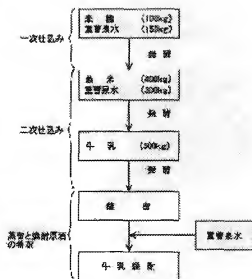
Priority number : 11162867 Priority date : 06.05.1999 Priority country : JP

(54) PRODUCTION OF MILK SHOCHU

(57)Abstract:

PROBLEM TO BE SOLVED: To provide a method for stably and efficiently producing milk shochu having excellent flavor and taste in a high yield.

SOLUTION: When producing milk shochu, a clear distilled liquor made from rice and milk as principal raw materials, by a double-stage fermentation method, this method features that hot-spring water is used as water necessary for all manufacturing processes and milk is added/mixed within a period ranging from the start of secondary fermentation to the third day after the start to brew secondary mash.



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- milk added during 2nd fermentation (p. 4)
- alkaline spring water p. 3
- HCO_3^{2-} (p. 4)
- no addition during the 2nd step.

no adjustment

[Detailed Description of the Invention]

[0001]

[Field of the Invention] This invention relates to the method of manufacturing efficiently the cow's milk white distilled liquor which has the flavor which was excellent in fruits flavor in the high amount of acquisition to stability.

[0002]

[Description of the Prior Art] Some are proposed until now about the manufacturing method of the cow's milk white distilled liquor which uses cow's milk as a part of raw material. For example, the manufacturing method of the cow's milk white distilled liquor which uses cow's milk for JP,61-132173,A instead of water, and does not use any water is indicated. To JP,1-108971,A, the manufacturing method of the cow's milk white distilled liquor which adds cow's milk or its work to the mash under fermentation is indicated.

[0003]

[Problem(s) to be Solved by the Invention] However, by the manufacturing method of a statement, to JP,61-132173,A. Since a lot of cow's milk is used, fat and protein which are contained in cow's milk check the alcoholic fermentation by yeast, or, The cow's milk white distilled liquor which has the flavor which affected the scent of the white distilled liquor obtained and was excellent as a result could not be manufactured, but the white distilled liquor which has a milk bad smell, and when saprophytic bacteria bred by a fermentation process, putrefaction arose and only crude white distilled liquor was obtained. In the manufacturing method of a statement, to JP,1-108971,A. Although it heat-sterilized and this is added, after performing pH adjustment and also so that saprophytic bacteria may breed to mash and putrefaction may not arise by adding cow's milk and its work (the whey heat-sterilized for 60 minutes at 100 °C is used in an example after sulfuric acid adjusts pH to 5.0.) That there is no example which uses cow's milk itself tends to decompose cow's milk itself, and since it was thought that it was very difficult to carry out simultaneous fermentation with other raw materials, it is considered. I can hear also from the white distilled liquor manufactured using cow's milk itself not having been commercialized actually until now, either about this. From a viewpoint of simplification of a manufacturing process, it was not desirable that such operation is needed, and even if it took such a measure, the white distilled liquor obtained was not able to manufacture the cow's milk white distilled liquor which has the flavor which does not have the conventional white distilled liquor and any difference, either, and was excellent. It had become a big technical problem how the fermentation of the milk sugar contained in cow's milk is controlled by any above-mentioned method.

[0004] Then, an object of this invention is to provide the method of manufacturing efficiently the cow's milk white distilled liquor which conquers the problem and technical problem which the manufacturing method of the cow's milk white distilled liquor proposed until now has, and has

the outstanding flavor in the high amount of acquisition to stability.

[0005]

[Means for Solving the Problem] This invention persons are using rice and cow's milk for the main raw material, using hot spring water as required water in a manufacture whole process, and performing addition mixing of cow's milk within a fixed period, as a result of repeating research between many years in view of the above-mentioned point, The knowledge of the ability to manufacture efficiently cow's milk white distilled liquor which has the flavor which was excellent in fruits flavor in the high amount of acquisition to stability was carried out.

[0006] This invention is made based on the above-mentioned knowledge, and a manufacturing method of cow's milk white distilled liquor of this invention, In the passage according to claim 1 manufacturing twice cow's milk white distilled liquor which made rice and cow's milk the main raw material by a preparation method, in a manufacture whole process, hot spring water is used as required water, addition mixing of the cow's milk is carried out within three days after the time of a secondary preparation start - a start, and secondary mash is built. In a manufacturing method of the cow's milk white distilled liquor according to claim 1, a manufacturing method of the cow's milk white distilled liquor according to claim 2 carries out addition mixing of the cow's milk, and performs primary preparation to rice malt, hot spring water, and yeast. A manufacturing method of the cow's milk white distilled liquor according to claim 3, Primary brewing which mixes rice malt 100 weight section, 120 to hot-spring-water 180 weight section, and yeast, and is fermented for two to four days, Secondary brewing which carries out addition mixing and ferments 300 to cow's milk 700 weight section for five to 12 days after carrying out addition mixing of 240 to hot-spring-water 360 weight section and the 320 to steamed rice 480 weight section at primary mash obtained by this primary brewing and making it ferment for one to three days is performed, Secondary mash obtained by this secondary preparation is distilled. A manufacturing method of the cow's milk white distilled liquor according to claim 4, Primary brewing which mixes rice malt 100 weight section, 120 to hot-spring-water 180 weight section, and yeast, and is fermented for two to four days, Secondary brewing which carries out addition mixing of 240 to hot-spring-water 360 weight section, 320 to steamed rice 480 weight section, and the 300 to cow's milk 700 weight section at primary mash obtained by this primary brewing, and is fermented for five to 12 days is performed, and secondary mash obtained by this secondary brewing is distilled. A manufacturing method of the cow's milk white distilled liquor according to claim 5, Primary brewing which mixes rice malt 100 weight section, 60 to hot-spring-water 90 weight section, 60 to cow's milk 90 weight section, and yeast, and is fermented for two to four days, Secondary brewing which carries out addition mixing and ferments 210 to cow's milk 640 weight section for five to 12 days after carrying out addition mixing of 240 to hot-spring-water 360 weight section and the 320 to steamed rice 480 weight section at primary mash obtained by this

[0007]

[0008] In this invention, rice malt is used as koji and rice is used as main raw material. As for a malted rice, breaking finely is desirable although what is necessary is just to perform preparation of rice malt by the method usually performed. In this way, saccharification to sugar from the starch by an aspergillus is performed efficiently, and the koji rate of rice malt can make the amount of acquisition (quantity of the white distilled liquor obtained from 1 t of raw material) increase at least by Lycium chinense. The white-distilled-liquor yeast by which normal use is carried out to white-distilled-liquor structure should just be used for yeast. What is necessary is just to perform preparation of the steamed rice used by secondary preparation by the method usually performed.

[0009] The first point characterized in this invention is using hot spring water as required water in the whole process of white-distilled-liquor structure. As hot spring water, alkaline spring water (sodium hydrogencarbonate garden pond) is desirable. The main ingredients of a positive ion are sodium ion, the main ingredients of negative ion are hot spring water of the bicarbonate, and alkaline spring water presents alkalinity including various ingredients. By **** (ing), it is known that there is an effect in diabetes mellitus, a chronic alimentary disease, gout, liver disease, etc. It is such alkalinity and it is not desirable in idealistic theory to use the hot spring water which moreover contains various ingredients for white-distilled-liquor structure. However, if hot spring water is used, the saccharification and alcoholic fermentation from starch to sugar will be performed efficiently. It adds to the ability of manufacturing process days to be shortened (this knowledge has just already been going to be opened to JP,63-123371,A by this invention person), Even if pH adjustment of cow's milk, etc. are not performed or it does not perform consideration special about the fermentation of the milk sugar contained in cow's milk, without cow's milk and mash which carried out addition mixing rotting, It completely deserves surprise that it turned out that the cow's milk white distilled liquor which has the flavor which was excellent in fruits flavor can be efficiently manufactured in the high amount of acquisition to stability. As for hot spring water, after cooling to 25 **, drawing up and stirring for the purpose of removal of a gaseous-hydrogen-sulfide smell, and removal of a sediment, it is desirable to filter and use it. *gways*

[0010] In this invention, the second characterized point cow's milk, May not necessarily carry out addition mixing at what kind of time in a manufacturing process, and addition mixing of cow's milk, When secondary preparation is started without carrying out when carrying out addition mixing of hot spring water and the steamed rice which is the main raw material at primary mash at the time of a secondary preparation start, or carrying out addition mixing of the cow's milk, I hear that it must carry out within three days after a start, and it is. While secondary mash can be built with the fermentation for five to 12 days by carrying out addition mixing of the cow's milk to such timing, when addition mixing of the cow's milk is carried out after this, While a lot of oil originating in the fat of cow's milk to which the amount of acquisition falls covering the secondary mash surface and becoming very difficult to treat it operationally, It is because it turns out in this invention person's old examination that the problem of the saprophytic bacteria [the feature of the flavor by having carried out addition mixing of the cow's milk] no longer coming out of mixing, and breeding may be produced. When addition mixing of the cow's milk is carried out at the time of a secondary preparation start, that the tendency to bring about Kougami of a flavor and improvement in the amount of acquisition is shown is a fact which should be observed.

[0011] Although primary preparation may mix yeast with hot spring water to rice malt and may be performed to it, it may carry out addition mixing of the cow's milk, and may be performed to

this. Even if it carries out addition mixing of the cow's milk at primary preparation, cow's milk does not rot, or primary mash structure is not affected, and the tendency to bring about Kougami of a flavor and improvement in the amount of acquisition, not to mention it, is shown. [0012]As for the addition mixed amount of cow's milk, it is desirable to consider it as 300 to 700 weight section to rice malt 100 weight section. It is because there is a possibility that the feature of the flavor by having carried out addition mixing of the cow's milk may stop coming out when less than 300 weight sections, and a possibility that oil may arise so much is shown in the secondary mash surface when more than 700 weight sections.

[0013]The following methods are mentioned as a manufacturing method of the cow's milk white distilled liquor recommended in this invention.

1. Primary brewing which mixes rice malt 100 weight section, 120 to hot-spring-water 180 (desirably 130-170) weight section, and yeast, and is fermented during 2 - 4 (desirably 2.5-3.5) day, Addition mixing of 240 to hot-spring-water 360 (desirably 270-330) weight section and the 320 to steamed rice 480 (desirably 350-450) weight section is carried out at the primary mash obtained by this primary preparation. How to distill the secondary mash which performed secondary brewing which carries out addition mixing and ferments 300 to cow's milk 700 (desirably 400-600) weight section during 5 - 12 (desirably 7-10) day after making it ferment during 1 - 3 (desirably 1.5-2.5) day, and was obtained by this secondary brewing.

[0014]2. Primary brewing which mixes rice malt 100 weight section, 120 to hot-spring-water 180 (desirably 130-170) weight section, and yeast, and is fermented during 2 - 4 (desirably 2.5-3.5) day, Addition mixing of 240 to hot-spring-water 360 (desirably 270-330) weight section, 320 to steamed rice 480 (desirably 350-450) weight section, and the 300 to cow's milk 700 (desirably 400-600) weight section is carried out at the primary mash obtained by this primary preparation. How to distill the secondary mash which performed secondary brewing fermented during 5 - 12 (desirably 7-10) day, and was obtained by this secondary brewing.

[0015]3. Primary brewing which mixes rice malt 100 weight section, 60 to hot-spring-water 90 (desirably 65-85) weight section, 60 to cow's milk 90 (desirably 65-85) weight section, and yeast, and is fermented during 2 - 4 (desirably 2.5-3.5) day, Addition mixing of 240 to hot-spring-water 360 (desirably 270-330) weight section and the 320 to steamed rice 480 (desirably 350-450) weight section is carried out at the primary mash obtained by this primary preparation. How to distill the secondary mash which performed secondary brewing which carries out addition mixing and ferments 300 to cow's milk 700 (desirably 400-600) weight section during 5 - 12 (desirably 7-10) day after making it ferment during 1 - 3 (desirably 1.5-2.5) day, and was obtained by this secondary brewing.

[0016]4. Primary brewing which mixes rice malt 100 weight section, 60 to hot-spring-water 90 (desirably 65-85) weight section, 60 to cow's milk 90 (desirably 65-85) weight section, and yeast, and is fermented during 2 - 4 (desirably 2.5-3.5) day, Addition mixing of 240 to hot-

spring-water 360 (desirably 270-330) weight section, 320 to steamed rice 480 (desirably 350-450) weight section, and the 300 to cow's milk 700 (desirably 400-600) weight section is carried out at the primary mash obtained by this primary preparation. How to distill the secondary mash which performed secondary brewing fermented during 5 - 12 (desirably 7-10) day, and was obtained by this secondary brewing.

[0017]When distilling secondary mash, it is desirable to distill, after removing floating matter, such as oil of the secondary mash surface, just before that if needed. Hot spring water is used for the white-distilled-liquor malt obtained by the above-mentioned method as adding water if needed, and it should just adjust it to predetermined alcohol concentration.

[0018]Thus, the cow's milk white distilled liquor obtained is water-white white distilled liquor which has the flavor which does not have a cow's milk bad smell and was excellent in fruits flavor.

[0019]

[Example]An example explains the manufacturing method of the cow's milk white distilled liquor of this invention. In the following examples, it was filtered and used, after cooling to 25 **, drawing up and stirring the alkaline spring water which uses 2128-3, Shimo-bayashimachi, Hitoyoshi-shi, Kumamoto-ken as a source place.

[0020]Example 1: The mixture of 100 kg of one (primary brewing) rice malt of ***** of cow's milk white distilled liquor, and 150 kg of alkaline spring water and yeast was prepared, it put in the tub, and primary mash was obtained by making it ferment for three days at 20-25 **. (Secondary brewing) Addition mixing of 300 kg of alkaline spring water and 400 kg of the steamed rices was carried out, and the primary mash obtained by primary brewing was fermented at 25-33 **. And carried out addition mixing of 500 kg of the cow's milk two days after the fermentation start, it was made to ferment for eight more days, and secondary mash was obtained.

(Distillation) In accordance with the conventional method, the simplex distillation method carried out distillation under reduced pressure of the secondary mash obtained by secondary brewing, and the white-distilled-liquor malt before and behind 40 alcohol concentration was obtained.

(Dilution of white-distilled-liquor malt) It diluted using alkaline spring water by having made into adding water the white-distilled-liquor malt obtained by the above-mentioned method, and the white distilled liquor before and behind 25 alcohol concentration was obtained. The amount of acquisition of the white distilled liquor per 1 t of rice was about 450 kg. The cow's milk white distilled liquor obtained by the above-mentioned method was water-white white distilled liquor which has the flavor which was excellent in fruits flavor. Process drawing of the manufacturing method of the cow's milk white distilled liquor of this example is shown in drawing 1.

[0021]Example 2: Cow's milk white distilled liquor was manufactured like Example 1 except

having carried out to the primary mash obtained by primary brewing in 2 secondary brewing of ***** of cow's milk white distilled liquor by carrying out addition mixing of 300 kg of alkaline spring water, 400 kg of steamed rices, and 500 kg of the cow's milk, and making it ferment for eight days at 25-33 **. In Example 2, the amount of acquisition of the white distilled liquor per 1 t of rice was about 460 kg. The scent was purer although the obtained cow's milk white distilled liquor had the same flavor as the cow's milk white distilled liquor obtained in Example 1.

[0022]Example 3: Instead of 150 kg of alkaline spring water in the primary preparation of three Examples 1 of ***** of cow's milk white distilled liquor, cow's milk white distilled liquor was manufactured like Example 1 except having used 75 kg of alkaline spring water, and 75 kg of cow's milk. In Example 3, the amount of acquisition of the white distilled liquor per 1 t of rice was about 455 kg. The scent was purer although the obtained cow's milk white distilled liquor had the same flavor as the cow's milk white distilled liquor obtained in Example 1.

[0023]Example 4 : It carried out to the primary mash obtained by primary brewing in 4 secondary brewing of ***** of cow's milk white distilled liquor by carrying out addition mixing of 300 kg of alkaline spring water, 400 kg of steamed rices, and 500 kg of the cow's milk, and making it ferment for eight days at 25-33 **,Cow's milk white distilled liquor was manufactured like Example 3 except having used the net made from aluminum (since floating matter does not stick to the net itself, the net made from aluminum has high convenience), and having removed the floating matter of the surface, just before distilling secondary mash. In Example 4, the amount of acquisition of the white distilled liquor per 1 t of rice was about 455 kg. The scent was purer although the obtained cow's milk white distilled liquor had the same flavor as the cow's milk white distilled liquor obtained in Example 1.

[0024]Example 5: The flavor examination of the cow's milk white distilled liquor obtained in flavor examination example 1 of the cow's milk white distilled liquor obtained in Example 1 was done by 15 persons' panelist. As a result, all the members are fruit wine about this white distilled liquor, or judged fruit to be the white distilled liquor made into raw material, and those who found out that it was the white distilled liquor which uses cow's milk for raw material were not.

[0025]Example 6: The analysis result in analysis result Kumamoto Industrial Research Center of the aroma component of the cow's milk white distilled liquor obtained in Example 1 is shown in Table 1. Although the white distilled liquor shown in Table 1 is white distilled liquor which makes rice raw material altogether including the cow's milk white distilled liquor (invention-in-this-application article) obtained in Example 1, The cow's milk white distilled liquor obtained in Example 1 is having used cow's milk and alkaline spring water, and it had a completely different aroma component content ratio from other white distilled liquor so that clearly from Table 1 (observe the content of ethyl hexoate, ethyl caprylate, and ethyl caprate especially). It seems that this aroma component content ratio has contributed to the flavor which was

excellent in the fruits flavor of the cow's milk white distilled liquor obtained in Example 1.

[0026]

[Table 1]

	本願発明品	他社製品A	他社製品B	他社製品C	他社製品D	他社製品E	他社製品F
アセトアルデヒド	20.048	10.022	13.486	15.885	7.965	11.073	7.028
酢酸エチル	44.215	47.287	53.017	54.319	55.130	45.398	61.756
酢酸イソブチル	0.199	0.366	0.512	0.552	0.169	0.162	0.224
n-プロピルアルコール	208.839	126.195	125.922	135.001	193.367	179.418	180.924
イソブチルアルコール	243.354	211.253	223.012	184.785	142.972	185.111	114.223
酢酸イソアミル	4.921	9.643	10.470	11.710	5.240	4.528	7.798
イソアミルアルコール	369.635	418.170	420.544	362.043	446.791	494.917	365.929
カプロン酸エチル	8.548	0.433	0.580	0.687	0.526	0.420	0.878
β-フェネチルアルコール	64.785	26.114	48.756	22.569	-	35.280	35.797
カプリル酸エチル	0.146	0.006	0.013	0.013	0.025	0.015	0.050
カプリン酸エチル	0.040	-	0.002	0.002	0.006	0.002	0.010
酢酸β-フェネチル	0.049	0.049	0.071	0.023	0.067	0.002	0.097
ラウリン酸エチル	-	-	0.001	0.007	-	0.048	-
ミリスチン酸エチル	-	-	-	0.003	-	0.006	-
パルミチン酸エチル	-	-	-	-	0.002	-	-

いずれの焼酎も米を原料とする
いずれの焼酎も減圧蒸留で蒸留
いずれの焼酎もアルコール濃度は25度
単位はppm

[0027]Example 7: Voice that condition became good is brought near from people who have drunk habitually the cow's milk white distilled liquor obtained in reputation example 1 of the cow's milk white distilled liquor obtained in Example 1. Many voice that there was a trichogenous effect is brought near from national every place by carrying out the spray of this cow's milk white distilled liquor to a head. Voice that the toothache had an effect by carrying out a spray to a cavity etc. are brought near by surface deterioration or atopic dermatitis by applying this cow's milk to the skin.

[0028]

[Effect of the Invention]According to this invention, the cow's milk white distilled liquor which has the flavor excellent in using rice and cow's milk for the main raw material, using hot spring water as required water in a manufacture whole process, and performing addition mixing of cow's milk within a fixed period can be efficiently manufactured in the high amount of acquisition to stability. The usual white distilled liquor of this cow's milk white distilled liquor is natural alkalinescence (pH 7-8) to pH being about 4 acidity.

They are a fruity scent and the white distilled liquor good for health dramatically also in raw material which mellow taste and the freshness which gets drunk and awakes are the features, and is used.

There are very variegated effects including a hair-growing operation by carrying out a spray to

the skin. It is thought that such a feature that the cow's milk white distilled liquor manufactured by the manufacturing method of this invention has is what is produced when the rice, cow's milk, and hot spring water which are raw material make a synergistic effect by a fermentation process.

[Translation done.]